

09/367019

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.30	0.72

STN INTERNATIONAL LOGOFF AT 13:38:42 ON 13 DEC 2002

=> file .1771textile

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.42	0.42

FILE 'TEXTILETECH' ENTERED AT 14:15:20 ON 13 DEC 2002

COPYRIGHT (C) 2002 Inst. of Textile Technology

FILE 'WTEXTILES' ENTERED AT 14:15:20 ON 13 DEC 2002

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FILE 'PIRA' ENTERED AT 14:15:20 ON 13 DEC 2002

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FILE 'CAPLUS' ENTERED AT 14:15:20 ON 13 DEC 2002

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=> s multilayer or multi-layer or (multi layer)

L1 97203 MULTILAYER OR MULTI-LAYER OR (MULTI LAYER)

=> s hydrophobic

L2 112345 HYDROPHOBIC

=> s hydrophilic

L3 74205 HYDROPHILIC

=> s textile? or fabric? or material?

L4 3093049 TEXTILE? OR FABRIC? OR MATERIAL?

=> set msteps on

SET COMMAND COMPLETED

=> s l1 and l2 and l3 and l4
L5 18 FILE TEXTILETECH
L6 16 FILE WTEXTILES
L7 11 FILE PIRA
L8 114 FILE CAPLUS

TOTAL FOR ALL FILES

L9 159 L1 AND L2 AND L3 AND L4

=> s perspir? or liquid? or sweat? or moistur?

L10 14424 FILE TEXTILETECH
L11 12607 FILE WTEXTILES
L12 23390 FILE PIRA
L13 1381054 FILE CAPLUS

TOTAL FOR ALL FILES

L14 1431475 PERSPIR? OR LIQUID? OR SWEAT? OR MOISTUR?

=> s l9 and l14

L15 8 FILE TEXTILETECH
L16 11 FILE WTEXTILES
L17 4 FILE PIRA
L18 25 FILE CAPLUS

TOTAL FOR ALL FILES

L19 48 L9 AND L14

=> d l15 1-2 bib,abs

L15 ANSWER 1 OF 8 TEXTILETECH COPYRIGHT 2002 Inst. of Textile Technology
AN 658856 TEXTILETECH
DN 200209305
TI Fleece Removes **Moisture** and Retains Heat.
SO Advances in Textiles Technology, : 3+, 3 pages (Nov. 2002).
CODEN: ATTDZ
DT Journal
LA English
AB Malden Mills Industries Incorporated's double jersey composite **fabric** offers improved thermal properties and **moisture** removal. The **fabric**, which can be manufactured from polyester or other manmade yarns, consists of a **hydrophilic** inner layer and a **hydrophobic** outer layer. A knit plaited construction allows the inner and outer layers to be distinct yet integrated. Refractory carbide embedded in the inner layer enhances the retention of body heat. The linear density of fibers in the inner layer is equal to or greater than that of the outer layer, allowing **moisture** to wick away from the wearer's body. The linear density of yarns in the inner layer cannot exceed that of the outer layer to ensure the horizontal spread of **moisture** in the outer layer. Yarns in the outer layer are 11-33 tex, whereas yarns in the inner layer are 5.6-16.7 tex. The **fabric**, which weighs 68-680 grams per square meter, bears European patent number 1,176,242.

L15 ANSWER 2 OF 8 TEXTILETECH COPYRIGHT 2002 Inst. of Textile Technology
AN 653206 TEXTILETECH
DN 200203655
TI Dynamic Heat and Water Transfer through Layered **Fabrics**.
AU Fohr J. P.; Couton D.; Treguiet G.
CS Univ. de Poitiers
SO Textile Research Journal, 72, No. 1: 1+, 12 pages (Jan. 2002).
Reference(s): 36 refs.
CODEN: TRJOA9
DT Journal
LA English

AB A model of heat and water transfer through layered **fabrics** considered such factors and properties as **fabric hydrophobic** or **hydrophilic** treatment; membrane lamination; **fabric** surface modification; sorption and desorption; free water condensation or evaporation; **liquid**, vapor, and absorbed water diffusion; heat conduction; and between layer contact resistance. The energy and mass balance led to two differential equations. A diffusion equation expressed **fabric** hygroscopic properties. The model simulated all sets of **fabric** layers and demonstrated that individual layer properties did not affect the behavior of all **fabric** layers. Future research should measure the diffusion coefficient for **liquid** and vapor bound water and contact resistances between layers.

=> d his

(FILE 'HOME' ENTERED AT 14:13:57 ON 13 DEC 2002)

FILE 'TEXTILETECH, WTEXTILES, PIRA, CAPLUS' ENTERED AT 14:15:20 ON 13 DEC 2002

L1 97203 S MULTILAYER OR MULTI-LAYER OR (MULTI LAYER)
L2 112345 S HYDROPHOBIC
L3 74205 S HYDROPHILIC
L4 3093049 S TEXTILE? OR FABRIC? OR MATERIAL?
SET MSTEPS ON
L5 18 FILE TEXTILETECH
L6 16 FILE WTEXTILES
L7 11 FILE PIRA
L8 114 FILE CAPLUS
TOTAL FOR ALL FILES
L9 159 S L1 AND L2 AND L3 AND L4
L10 14424 FILE TEXTILETECH
L11 12607 FILE WTEXTILES
L12 23390 FILE PIRA
L13 1381054 FILE CAPLUS
TOTAL FOR ALL FILES
L14 1431475 S PERSPIR? OR LIQUID? OR SWEAT? OR MOISTUR?
L15 8 FILE TEXTILETECH
L16 11 FILE WTEXTILES
L17 4 FILE PIRA
L18 25 FILE CAPLUS
TOTAL FOR ALL FILES
L19 48 S L9 AND L14

=> dup rem l19

PROCESSING COMPLETED FOR L19

L20 48 DUP REM L19 (0 DUPLICATES REMOVED)

=> d l15 1-8 bib,abs

L15 ANSWER 1 OF 8 TEXTILETECH COPYRIGHT 2002 Inst. of Textile Technology
AN 658856 TEXTILETECH
DN 200209305
TI Fleece Removes **Moisture** and Retains Heat.
SO Advances in Textiles Technology, : 3+, 3 pages (Nov. 2002).
CODEN: ATTDZ
DT Journal
LA English
AB Malden Mills Industries Incorporated's double jersey composite **fabric** offers improved thermal properties and **moisture** removal. The **fabric**, which can be manufactured from polyester or other manmade yarns, consists of a **hydrophilic** inner layer and a **hydrophobic** outer layer. A knit plaited construction

allows the inner and outer layers to be distinct yet integrated. Refractory carbide embedded in the inner layer enhances the retention of body heat. The linear density of fibers in the inner layer is equal to or greater than that of the outer layer, allowing **moisture** to wick away from the wearer's body. The linear density of yarns in the inner layer cannot exceed that of the outer layer to ensure the horizontal spread of **moisture** in the outer layer. Yarns in the outer layer are 11-33 tex, whereas yarns in the inner layer are 5.6-16.7 tex. The **fabric**, which weighs 68-680 grams per square meter, bears European patent number 1,176,242.

- L15 ANSWER 2 OF 8 TEXTILETECH COPYRIGHT 2002 Inst. of Textile Technology
 AN 653206 TEXTILETECH
 DN 200203655
 TI Dynamic Heat and Water Transfer through Layered **Fabrics**.
 AU Fohr J. P.; Couton D.; Treguier G.
 CS Univ. de Poitiers
 SO Textile Research Journal, 72, No. 1: 1+, 12 pages (Jan. 2002).
 Reference(s): 36 refs.
 CODEN: TRJOA9
 DT Journal
 LA English
 AB A model of heat and water transfer through layered **fabrics** considered such factors and properties as **fabric hydrophobic** or **hydrophilic** treatment; membrane lamination; **fabric** surface modification; sorption and desorption; free water condensation or evaporation; **liquid**, vapor, and absorbed water diffusion; heat conduction; and between layer contact resistance. The energy and mass balance led to two differential equations. A diffusion equation expressed **fabric** hygroscopic properties. The model simulated all sets of **fabric** layers and demonstrated that individual layer properties did not affect the behavior of all **fabric** layers. Future research should measure the diffusion coefficient for **liquid** and vapor bound water and contact resistances between layers.
- L15 ANSWER 3 OF 8 TEXTILETECH COPYRIGHT 2002 Inst. of Textile Technology
 AN 648336 TEXTILETECH
 DN 200108385
 TI New Generation of **Hydrophilic** Spunmelt Composites.
 AU Madsen J. B.
 CS Fibertex A/S
 SO Nonwovens World, 10, No. 4: 69+, 7 pages (Aug.-Sept. 2001).
 CODEN: NWWOED
 DT Journal
 LA English
 AB An overview of **hydrophilic** spun melt composite **fabrics** addresses the properties of spun bonded and melt blown **fabrics**, **hydrophilic multilayer** spun bonded and melt blown composite **fabrics**, permanently **hydrophobic** top sheet **fabrics**, and **fabric** applications. Spun bonded/melt blown/spun bonded (SMS) **fabrics** combine continuous spun bonded filaments with melt blown fibers to yield **fabrics** with high tensile strength, good hand, and good **liquid** barrier properties. A **hydrophilic** nonwoven composite **fabric** manufactured from several spun bonded and melt blown layers combines high and fast **liquid** flow through with small particle retention. The spun bonded layers provide strength and stability and reinforce the fragile melt blown layers that provide **liquid** penetration and transport and loft. SMS **fabrics** weighing 8-13 grams per square meter can replace conventional spun bonded top sheet **fabrics** weighing 14-17 grams per square meter.
- L15 ANSWER 4 OF 8 TEXTILETECH COPYRIGHT 2002 Inst. of Textile Technology

AN 630410 TEXTILETECH
 DN 200000059
 TI **Hydrophilic** Nylon -- Properties and Applications in Medical
Textiles.
 AU Facinelli J. V.
 CS AlliedSignal
 SO Medical Textiles and Biomedical Polymers and Materials, : 29 pages (Sept.
 8-9, 1999).
 DT Journal
 LA English
 NTE ITT Cat. No. RD 73 .C53 M4 1999.
 AB An overview of AlliedSignal's **hydrophilic** nylon fibers
 addresses their properties and applications in medical **textiles**
 . **Hydrophilic** nylon is a thermoplastic fiber with permanent
 absorbency and breathability, excellent hand, and the strength and
 durability of conventional nylon. Although its melting point is only 1-2
 degrees centigrade lower than that of nylon 6, its softening point is 40
 degrees centigrade lower. Film extrusion trials revealed that the polymer
 was easy to cast for a wide range of specifications. These fibers have
 applications in the manufacture of surgical gowns, pressure suits,
 bandages, **moisture** delivery systems, and two layered
fabrics with an opposing **hydrophobic** layer.

L15 ANSWER 5 OF 8 TEXTILETECH COPYRIGHT 2002 Inst. of Textile Technology
 AN 612369 TEXTILETECH
 DN 199801218
 TI Effect of Composition and Coagulation Structure of Coating Polymers Made
 from **Hydrophobic** Polyurethane Resin on **Moisture**
 Transporting Properties in Waterproof/**Moisture**-Permeable
Fabrics.
 AU Enomoto M.; Suehiro K.; Muraoka Y.
 CS Saga Univ; Seikoh Chemicals Co. Ltd
 SO Journal of the Textile Machinery Society of Japan, 50, No. 9: T233+, 9
 pages (Sept. 1997). Reference(s): 13 refs.
 CODEN: SKGKAO
 DT Journal
 LA Japanese
 AB Researchers prepared waterproof/**moisture** permeable nylon
fabrics using a wet coagulation process that blended various
 ratios of a polyester type polyurethane (PU) and a polytetramethylene
 ether/ester copolymer type polyurethane (PTGPU) with different molecular
 weights and investigated their cross sections and water transport
 properties. They adjusted the PU/PTGPU ratio in a limited range,
 accounting for the degree of polymerization. The **fabrics**
 consisted of three layers: an inner surface that comes into contact with
 the wearer's skin and has **hydrophobic** micronetworks, an
 intermediate porous layer of PU that is **hydrophilic** and useful
 for **moisture** transport, and an outer layer composed of
hydrophobic nylon **fabric**. Results revealed an
 improvement in water transporting properties, suggesting the use of the
 multilayered **fabric** in sportswear.

L15 ANSWER 6 OF 8 TEXTILETECH COPYRIGHT 2002 Inst. of Textile Technology
 AN 601373 TEXTILETECH
 DN 199609600
 TI Recording the Clothing Hygiene Properties of **Textile** by
 Infra-Red Thermography.
 AU Dornig D.; Teubner U.; Sprossig P.
 CS Heidrun Sehm, Auerbacher Ingenieur- und Handelsges; SLG
 SO Melliland Textilberichte/International Textile Reports (German Edition),
 77, No. 10: 698+, 3 pages; E147+, 2 pages (Oct. 1996). Reference(s): 5
 refs.
 CODEN: MTIRDL
 DT Journal

LA German; English
AB Researchers used infrared thermography to examine the effects of such complex apparel comfort factors as different clothing layers, **perspiration** rate, bodily stress, interrelationships with climatic conditions, industrial protective clothing, cut configuration, **textile** finishing processes (calendering, sueding, rinsing, and **hydrophobic** and **hydrophilic** finishing), fibers and blends, and methods of construction. Researchers collected infrared thermography imaging data for sportswear, hosiery, men's socks, and outerwear. They used human subjects undertaking various activities while wearing a variety of **fabric** and apparel combinations. Results suggest that infrared thermography is well suited for recording temperature profiles of **multilayer** apparel combinations in a variety of bodily stress situations.

L15 ANSWER 7 OF 8 TEXTILETECH COPYRIGHT 2002 Inst. of Textile Technology
AN 575402 TEXTILETECH
DN 199402566
TI **Multilayer Fabric Disperses Moisture.**
SO Medical Textiles, : 2-3 (Feb. 1994).
CODEN: METXEO

DT Journal
LA English

AB United States inventors have developed a **fabric** that can be incorporated into undergarments to combat problems of leakage and spotting in minor to moderate urinary incontinence and in urostomy patients. The **fabric** is made by combining fibers that move **moisture** away from the skin and disperse it through a number of layers. The outer layer of the **fabric** is not penetrated, thus preventing staining and spotting. A thick, permeable, **hydrophobic** layer of brushed polyester is next to the skin. A thin layer of **hydrophilic** nylon is next to the polyester. These two layers are produced by weaving, knitting, or nonwoven processing. A thick outer layer of Hydrofil, which is brushed to raise a nap for trapping and conveying **moisture**, is impermeable to **liquid**. This is followed by a layer of Sympatex. The **fabric** bears European patent 0,542,491.

L15 ANSWER 8 OF 8 TEXTILETECH COPYRIGHT 2002 Inst. of Textile Technology
AN 374549 TEXTILETECH
DN 197914549
TI **MOISTURE TRANSPORT IN FABRICS - THE MOISTURE RESISTANCE OF MULTI-LAYERED FABRICS.**

AU Naito M.; Nakajima T.

CS Yamanashi Univ; Ochanomizu Univ

SO Sen-i Seihin Shohi Kagaku, 20: 222-226 (June 1979) Reference(s): 3 refs.

DT Journal

LA Japanese

AB This article investigates the wear comfort of **hydrophilic** and **hydrophobic textile fabrics** and attempts to show the differences of the **moisture** transmission resistance of up to five **hydrophilic fabrics** layered one over another, up to five **hydrophobic fabrics** layered on over another, and **hydrophilic** and **hydrophobic fabrics** layered one over the other. The **moisture** transmission has been measured by the weighing method using a cup.

=> d 116 1-11 bib,abs

L16 ANSWER 1 OF 11 WORLD TEXTILES COPYRIGHT 2002 Elsevier Science B.V.
AN 2002:2009783 WTEXTILES
TI Dynamic heat and water transfer through layered **fabrics**
AU Fohr J.P.; Couton D.; Treguier G.

CS J.P. Fohr, Laboratoire d'Etudes Thermiques, Universite de Poitiers,
Poitiers 86022, France.
SO Textile Research Journal, (2002), 72/1 (1-12), 36 reference(s)
ISSN: 0040-5175
DT Journal; Article
CY United States
LA English
SL English
AB A model of heat and water transfer through layered **fabrics**,
such as wearing clothing, is developed in this paper. All particular
properties of recently developed **fabrics** are considered:
hydrophobic or **hydrophilic** treatment, membranes glued
onto a layer, and surface modification of the **textile**
(abrading). Physical phenomena taken into account are sorption or
desorption; free water condensation or evaporation; **liquid**,
vapor, and adsorbed water diffusion; and heat conduction and contact
resistances between layers. The model is dynamic for one-dimensional
transfers. Considering this particular porous medium, the energy and mass
balance lead to a system of two differential equations (**moisture**
, temperature). The validity of the model is examined in light of basic
experiments existing in the literature. The hygroscopic character of a
fabric can be expressed by a diffusion coefficient, which is a
function of the water content. Two possible formulations of this property
are given.

L16 ANSWER 2 OF 11 WORLD TEXTILES COPYRIGHT 2002 Elsevier Science B.V.
AN 2000:1986427 WTEXTILES
TI Enhanced exercise and **moisture** control
AU Dicker T.P.
SO High Performance Textiles, (2000), -/JAN. (9-10)
ISSN: 0144-5871
DT Journal; Article
CY United Kingdom
LA English
SL English
AV EMDOCS
AB A **multi layer** structure designed to direct
perspiration away from the body while increasing the workload for
the exerciser is described in this article. The invention is called a
'energy expenditure garment' and is constructed from a three layer
fabric. This **fabric** has a **hydrophobic**
material which directs the **moisture** away from the
wearer's body, a **hydrophilic** intermediate layer which stores
the **moisture**, and an outer non-porous layer which prevents
evaporation. A garment made out of this **material** would cover
the whole of the body.

L16 ANSWER 3 OF 11 WORLD TEXTILES COPYRIGHT 2002 Elsevier Science B.V.
AN 1999:1979041 WTEXTILES
TI **Multilayer** energy expenditure garment made from
hydrophobic/hydrophilic materials
IN Dicker T.P.
SO Official Gazette of the U.S. Patent and Trademark Office - Patents, (11
MAY 1999), 1222/2
ISSN: 0098-1133
PI US 5901373
DT Journal; Patent
CY United States
LA English
AV EMDOCS
AB An energy expenditure garment includes at least a portion of the garment
made from **multilayer** construction which has an inner layer of
hydrophobic material to direct **moisture** away
from the skin with an intermediate layer of **hydrophilic**

material to store the **moisture**. An outer layer of non-porous and non-**moisture** permeable **material** is provided outwardly of the storage layer to act as a barrier or wall for preventing evaporation of the **moisture** stored in the intermediate layer. Preferably, a **moisture** vapor transmission membrane is provided between the **hydrophobic** inner layer and the **hydrophilic** storage layer to provide one way flow of the **moisture** to the storage layer. IPC A41D.

- L16 ANSWER 4 OF 11 WORLD TEXTILES COPYRIGHT 2002 Elsevier Science B.V.
AN 1997:1961854 WTEXTILES
TI Breathable, disposable sanitary product construction
IN Poly-Bond Inc.; Bodford C.A.; Krishnakant R.
SO (1997)
Priority Information: Application: 552727, 3 November 1995
PI US 5643239 19970701
DT Patent; Patent
LA English
AV EMDOCS
AB A breathable diaper, feminine hygiene, or similar disposable sanitary product comprises a topsheet of **liquid-** and vapour-permeable, **hydrophilic material**, a core of highly absorbent **material**, a barrier formed of a **multilayer**, nonwoven **material** which is **hydrophobic** and vapour-permeable, and a backsheet formed of a **multilayer**, nonwoven **material** which is **hydrophobic** and vapour-permeable. IPC A61F.
- L16 ANSWER 5 OF 11 WORLD TEXTILES COPYRIGHT 2002 Elsevier Science B.V.
AN 1994:1938645 WTEXTILES
TI **Multilayer moisture** management **fabric** and garments incorporating a **moisture** management panel
IN Moretz H.L.; Brier D.L.
SO 1994, (1994)
Priority Information: 26 April 1994 Application: 2650, 11 January 1993.
Addition to USP 5 217 782
PI US 5306536
DT Journal; Patent; Patent
LA English
AV UMIST Library
AB A reusable, launderable, **multilayer, moisture** management **fabric** for use in a garment comprises: a thick knitted or woven, inner, **moisture-permeable, hydrophobic fabric** layer for positioning next to the skin of the wearer; a thin knitted or woven, intermediate, **hydrophilic fabric** layer positioned next to the first layer on the side away from the skin; and a relatively thick, knitted or woven, outer, **hydrophilic, moisture-permeable fabric** layer next to the **hydrophilic** layer. IPC B32B.
- L16 ANSWER 6 OF 11 WORLD TEXTILES COPYRIGHT 2002 Elsevier Science B.V.
AN 1994:1938120 WTEXTILES
TI **Multilayer moisture**-management elastic **fabric**
IN Moretz H.L.; Brier D.L.
SO 1994, (1994)
Priority Information: 29 March 1994 Application: 991761, 17 December 1992. Addition to USP 5 210 882
PI US 5297296
DT Journal; Patent; Patent
LA English
AV UMIST Library
AB A **multilayer, moisture**-management strap suitable for use as a waistband, wristband, headband or bra-strap comprises: a **moisture** transport **fabric** layer made from **hydrophobic** yarns, which is in contact with the skin and wicks

moisture away; a **moisture**-dispersing layer made from **hydrophilic** yarns for receiving **moisture** from the **hydrophobic moisture** transport layer; and elastic yarns integrated with the two **fabric** layers. IPC A41D.

L16 ANSWER 7 OF 11 WORLD TEXTILES COPYRIGHT 2002 Elsevier Science B.V.
AN 1993:1936232 WTEXTILES
TI Windproof and water-resistant composite **fabric** with barrier layer
IN Malden Mills Industries Inc.; Lumb D.; Rock M.
SO 1993, (1993)
Priority Information: 7 December 1993 Application: 9153, 26 January 1993.
Addition to USP 5 204 156
PI US 5268212
DT Journal; Patent; Patent
LA English
AV UMIST Library
AB A stretchable, drapable, water-vapour-permeable, windproof, water-resistant **fabric** for use in a garment comprises: an outer layer of **fabric**; an inner layer of **fabric** having a raised inner surface and a plain outer surface and formed from a **hydrophobic material** that has been rendered sufficiently **hydrophilic** to permit the wicking of **moisture** from the raised inner surface to the plain outer surface; and barrier means for providing resistance to wind and **liquid** water whilst allowing water vapour-transport. IPC B32B.

L16 ANSWER 8 OF 11 WORLD TEXTILES COPYRIGHT 2002 Elsevier Science B.V.
AN 1993:1933690 WTEXTILES
TI **Multilayer moisture**-management **fabric**
IN Moretz H.L.; Brier D.L.
SO 1993, (1993)
Priority Information: 8 June 1993 Application: 791066, 12 November 1991
PI US 5217782
DT Journal; Patent; Patent
LA English
AV UMIST Library
AB A reusable, launderable, **multilayer, moisture**-management **fabric** for a garment comprises: a thick knitted or woven inner, **moisture**-permeable, **hydrophobic fabric** layer for positioning next to the skin of the wearer; an intermediate, thin, knitted or woven **hydrophilic fabric** layer; and a thick knitted or woven outer, **hydrophilic, moisture**-permeable **fabric** layer comprising brushed **hydrophilic** nylon fibres. IPC B32B D06C.

L16 ANSWER 9 OF 11 WORLD TEXTILES COPYRIGHT 2002 Elsevier Science B.V.
AN 1993:1932227 WTEXTILES
TI **Multi-layer moisture** management **fabric** and garments incorporating a **moisture** management panel
IN Moretz H.L.; Brier D.L.
SO 1993, (1993)
Priority Information: 19 May 1993 Priority application: United States, 791066, 12 November 1991
PI EP 542491
DT Journal; Patent; Patent
LA English
AV UMIST Library
AB The construction of a laminate for use as a lining for control of the **moisture** vapour transmission in a garment is claimed. The face next to the skin of the wearer consists of a layer of relatively thin **hydrophilic fabric** which is adjacent to a relatively thick **moisture**-permeable **hydrophobic** layer. A

relatively thick **hydrophilic** layer is located on the opposite side of the **hydrophobic** layer. IPC D32B A61F.

L16 ANSWER 10 OF 11 WORLD TEXTILES COPYRIGHT 2002 Elsevier Science B.V.
AN 1987:8706776 WTEXTILES
TI Disposable urinary pad
IN Personal Products Co.; Holtman D.C.
CS JOHNSON & JOHNSON.
SO Priority Information: 11 August 1987 Application: 764701, 12 August 1985.
PI US 4685914
DT Journal; Patent; Patent
LA English
AV BTTG (Shirley Institute)
AB A disposable urinary pad comprises a **liquid**-impermeable flexible relatively thin shell with a superstructure placed in and filling the shell, consisting of a corrugated fibrous web of **hydrophobic** wet-resilient dry-resilient fibres. An absorbent medium consisting of a super-absorbent **material**, **hydrophilic** fibres, wadding, tissue or peat moss is in intimate contact with at least a portion of the superstructure and at least a portion of the shell. International Patent Classification A61F.

L16 ANSWER 11 OF 11 WORLD TEXTILES COPYRIGHT 2002 Elsevier Science B.V.
AN 1985:8503697 WTEXTILES
TI Knitgoods with novel hygienic properties for sportswear and underwear
AU Piller B.
CS VUP.
SO International Textile Bulletin. Fabric Forming, 1985, 31, First quarter, 72-76 (4 pages)., (1985)
DT Journal; Article; (Technical Information)
LA English
AV BTTG (Shirley Institute)
AB An integrated (**multilayer**) knitted **fabric** is a system consisting of at least two layers interlaced with one another. From a **textile**-physiological point of view, items of clothing made from such **fabrics** should be more practical and comfortable. The most important feature of the **fabric** is that on the inside, i.e. the side nearest to the body, it consists of a water-resistant, hygienic, permeable layer, usually polypropylene. The outer side of the **fabric** is a **hydrophilic**, absorbent layer, e.g. cotton and woollen yarns or blends of the latter with viscose rayon or other man-made fibres with good **moisture**-absorbing properties. The construction, finishing and properties of these **fabrics** are discussed.

=> d 117 1-4 bib,abs

L17 ANSWER 1 OF 4 PIRA COPYRIGHT 2002 PIRA
AN 95:54863 PIRA
DN 40903952
TI ANTISTATIC PHOTOGRAPHIC **MULTILAYER** BASE
IN Valsecchi A
PA MINNESOTA MINING AND MANUFACTURING CO
PI US 4582782
PRAI IT 7 Jun 1983
DT PATENT
LA UNAVAILABLE
FS 06; IA (Imaging Abstracts)
AB A photographic base is protected against the adverse effects resulting from the accumulation of static electric charges by providing it with a first antistatic **hydrophilic** layer, and also a protective **hydrophobic** layer which is coated on top of the first layer. This first layer is produced as a **liquid** coating containing a

hydrophilic non-diffusing sulphonated polymer, in the presence of an epoxysilane compound. The base described is of particular value where elements which contain at least one photosensitive image-forming layer are in use, and the antistatic and protective layers can be coated upon the opposite sides of the **material**. Such an antistatic layer is durable, abrasion resistant, non-tacky and unaffected by aqueous photographic solutions.

L17 ANSWER 2 OF 4 PIRA COPYRIGHT 2002 PIRA
AN 94:4286 PIRA
DN 20004421
TI **MULTILAYER FABRIC DISPERSES MOISTURE**
AU Anon
SO Med. Text., (1994) Feb. 1994, pp 2-3. ISSN: 0266-2078.
DT JOURNAL
LA ENGLISH
FS 07; NW (Nonwovens Abstracts)
AB A European patent application from U.S. researchers details undergarment panels made from a **multilayer fabric** which is designed to disperse **moisture** from the skin leaving the garment's outer layer unpenetrated. The **fabric** comprises a layer of **hydrophobic** brushed polyester next to the skin covered by a thin layer of **hydrophilic** nylon fibres such as Hydrofil. A brushed layer of the same fibres forms the next layer and the outermost layer is a membrane which is permeable to **moisture** and vapour but impermeable to **liquid** such as Gore-Tex or Sympatex. The thickness or density of any of these individual layers can be adjusted according to different levels of incontinence. (Short article)

L17 ANSWER 3 OF 4 PIRA COPYRIGHT 2002 PIRA
AN 93:17668 PIRA
DN 07-94-00335
TI DISPOSABLE PROTECTIVE WORKWEAR MADE OF THREE-LAYER COMPOSITE
AU Anon
SO Techtex Forum, (1993) no. 9, 1993, p. 210. ISSN: 0933-8128.
DT JOURNAL
LA GERMAN; NOT ENGLISH
FS 07; NW (Nonwovens Abstracts)
AB The new three-layer composite construction for disposable workwear from Sandler GmbH un Co. features a **hydrophilic** inner lining for absorption of body **moisture**, a middle layer consisting of a filter nonwoven for **moisture** exchange, and an outer firm **hydrophobic** nonwoven for protection against **liquid** splashes. The **material** also exhibits excellent tear resistance. Another innovation from Sandler features a **multilayer** nonwoven composite with an imprinted electrically conductive grid suitable for the manufacture of apparel for work, in which the occurrence of static charge needs to be avoided. (Short article)

L17 ANSWER 4 OF 4 PIRA COPYRIGHT 2002 PIRA
AN 93:17618 PIRA
DN 07-94-00331
TI PROTECTIVE PROFESSIONAL APPAREL FOR MINERS
AU Anon
SO Vliesstoff Nonwoven Int., (1993) no. 8, 1993, p. 262.
DT JOURNAL
LA GERMAN; NOT ENGLISH
FS 07; NW (Nonwovens Abstracts)
AB In the field of disposable professional apparel Sandler GmbH und Co. has introduced a **multi-layer** nonwoven consisting of an inner **hydrophilic** lining to absorb body **moisture**, a middle layer made up of a filtration nonwoven for effective temperature exchange and an outer **hydrophobic** nonwoven **fabric** which contributes to the strength and tear resistance of the apparel and

WEST[Help](#)[Logout](#)[Interrupt](#)[Main Menu](#)[Search Form](#)[Posting Counts](#)[Show S Numbers](#)[Edit S Numbers](#)[Preferences](#)[Cases](#)**Search Results -**

Term	Documents
(9 AND 13).DWPI.	1
(L9 AND L13).DWPI.	1

US Patents Full-Text Database
US Pre-Grant Publication Full-Text Database
JPO Abstracts Database
EPO Abstracts Database
Derwent World Patents Index

Database: IBM Technical Disclosure Bulletins**Search:**

L15

[Refine Search](#)[Recall Text](#)[Clear](#)**Search History****DATE:** Friday, December 13, 2002 [Printable Copy](#) [Create Case](#)

Set Name Query

side by side

Hit Count Set Name

result set

DB=USPT,PGPB; PLUR=YES; OP=ADJ

<u>L15</u>	L4 AND L14	0	<u>L15</u>
<u>L14</u>	L6 AND L13	28	<u>L14</u>
<u>L13</u>	428/86	446	<u>L13</u>
<u>L12</u>	L4 AND L8	0	<u>L12</u>
<u>L11</u>	L4 AND L7	0	<u>L11</u>
<u>L10</u>	L3 AND L7	0	<u>L10</u>
<u>L9</u>	L3 AND L8	0	<u>L9</u>
<u>L8</u>	L2 AND L6	192	<u>L8</u>
<u>L7</u>	L1 AND L6	268	<u>L7</u>
<u>L6</u>	SEAT COVERING OR BED OR SLEEPING BAG	185252	<u>L6</u>
<u>L5</u>	L4	4432	<u>L5</u>
<u>L4</u>	LINK SAME THREADS	4432	<u>L4</u>
<u>L3</u>	(LINK OR LINKING) SAME THREADS	5218	<u>L3</u>
<u>L2</u>	5/413R	445	<u>L2</u>
<u>L1</u>	2/69.5	1098	<u>L1</u>

END OF SEARCH HISTORY

<u>Set</u> <u>Name</u> side by side	<u>Query</u>	<u>Hit Count</u>	<u>Set</u> <u>Name</u> result set
<i>DB=USPT,PGPB; PLUR=YES; OP=ADJ</i>			
<u>L19</u>	L3 AND L18	1	<u>L19</u>
<u>L18</u>	L6 AND L16	71	<u>L18</u>
<u>L17</u>	L6 AND L16L16	0	<u>L17</u>
<u>L16</u>	HYDROPHOBIC LAYER AND HYDROPHILIC LAYER	485	<u>L16</u>
<u>L15</u>	L4 AND L14	0	<u>L15</u>
<u>L14</u>	L6 AND L13	28	<u>L14</u>
<u>L13</u>	428/86	446	<u>L13</u>
<u>L12</u>	L4 AND L8	0	<u>L12</u>
<u>L11</u>	L4 AND L7	0	<u>L11</u>
<u>L10</u>	L3 AND L7	0	<u>L10</u>
<u>L9</u>	L3 AND L8	0	<u>L9</u>
<u>L8</u>	L2 AND L6	192	<u>L8</u>
<u>L7</u>	L1 AND L6	268	<u>L7</u>
<u>L6</u>	SEAT COVERING OR BED OR SLEEPING BAG	185252	<u>L6</u>
<u>L5</u>	L4	4432	<u>L5</u>
<u>L4</u>	LINK SAME THREADS	4432	<u>L4</u>
<u>L3</u>	(LINK OR LINKING) SAME THREADS	5218	<u>L3</u>
<u>L2</u>	5/413R	445	<u>L2</u>
<u>L1</u>	2/69.5	1098	<u>L1</u>

END OF SEARCH HISTORY

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side by side

Hit Count Set Name

result set

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<u>L15</u>	2/2.14	143	<u>L15</u>
<u>L14</u>	l12 and l3	0	<u>L14</u>
<u>L13</u>	l9 and l12	2	<u>L13</u>
<u>L12</u>	l11 and l10	135	<u>L12</u>
<u>L11</u>	L7 AND L8	263	<u>L11</u>
<u>L10</u>	GARMENT	23447	<u>L10</u>
<u>L9</u>	AIR SAME CIRCULATION	32025	<u>L9</u>
<u>L8</u>	WOVEN SAME HYDROPHILIC SAME LAYER	619	<u>L8</u>
<u>L7</u>	WOVEN SAME HYDROPHOBIC SAME LAYER	640	<u>L7</u>
<u>L6</u>	WOVEN HYDROPHOBIC LAYER	1	<u>L6</u>
<u>L5</u>	WOVEN HYDROPHOBIC LAYER AND WOVEN HYDROPHILIC LAYER AND AIR CIRCULATION	0	<u>L5</u>
<u>L4</u>	HDROPHOBIC LAYER SAME HYDROPHILIC LAYER AND CIRCULATION MEANS	0	<u>L4</u>
<u>L3</u>	2/2.11	102	<u>L3</u>
<u>L2</u>	2/DIGEST 1	0	<u>L2</u>
<u>L1</u>	2/DIG 1	1	<u>L1</u>

END OF SEARCH HISTORY

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side by side			result set
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<u>L15</u>	l13 and l14	0	<u>L15</u>
<u>L14</u>	protective garment	1290	<u>L14</u>
<u>L13</u>	link threads	79	<u>L13</u>
<u>L12</u>	link threads	79	<u>L12</u>
<u>L11</u>	thread link	89	<u>L11</u>
<u>L10</u>	l8 and l9	0	<u>L10</u>
<u>L9</u>	l1 and l3	74	<u>L9</u>
<u>L8</u>	l1 and l5 and l6	135	<u>L8</u>
<u>L7</u>	l3 and l5 and l6	0	<u>L7</u>
<u>L6</u>	hydrophobic same woven same layer	640	<u>L6</u>
<u>L5</u>	hydrophilic same woven same layer	619	<u>L5</u>
<u>L4</u>	l1 and l2 and l3	0	<u>L4</u>
<u>L3</u>	link same threads	3953	<u>L3</u>
<u>L2</u>	circulating same means	1051	<u>L2</u>
<u>L1</u>	garment or space suit	23611	<u>L1</u>

END OF SEARCH HISTORY

Set Name Query

side by side

Hit Count Set Name

result set

DB=USPT; PLUR=YES; OP=ADJ

<u>L7</u>	12 and 16	2	<u>L7</u>
<u>L6</u>	(link or linking) same threads	4470	<u>L6</u>
<u>L5</u>	12 and 14	2	<u>L5</u>
<u>L4</u>	link same threads	3809	<u>L4</u>
<u>L3</u>	blimp same threads	2	<u>L3</u>
<u>L2</u>	428/86	439	<u>L2</u>
<u>L1</u>	3575776[pn]	1	<u>L1</u>

END OF SEARCH HISTORY

WEST Search History

DATE: Friday, December 13, 2002

Set Name Query

side by side

Hit Count Set Name

result set

DB=DWPI; PLUR=YES; OP=ADJ

L15	l9 and l13	1	L15
L14	l10 and l11 and l13	4	L14
L13	garment	17419	L13
L12	l9 and l10 and l11	0	L12
L11	layer same woven same hydrophobic same (material or fabric or textile)	149	L11
L10	layer same hydrophilic same woven same (material or fabric or textile)	163	L10
L9	link threads	120	L9

DB=USPT,PGPB; PLUR=YES; OP=ADJ

L8	l1 and l4	1	L8
L7	l1 and l3	4	L7
L6	l1 and l2	7	L6
L5	l1 and l2 and l3 and l4	0	L5
L4	link threads	79	L4
L3	layer same hydrophilic same woven same (material or fabric or textile)	562	L3
L2	layer same woven same hydrophobic same (material or fabric or textile)	602	L2
L1	66/195	617	L1

END OF SEARCH HISTORY

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Term	Documents
(13 AND 14).USPT,PGPB.	0
(L13 AND L14).USPT,PGPB.	0

Database:

US Patents Full-Text Database
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IBM Technical Disclosure Bulletins

Search:

L15

[Refine Search](#)[Recall Text](#)[Clear](#)**Search History****DATE:** Thursday, December 12, 2002 [Printable Copy](#) [Create Case](#)

Set Name Query

side by side

Hit Count Set Name

result set

DB=USPT,PGPB; PLUR=YES; OP=ADJ

<u>L15</u>	l13 and l14	0	<u>L15</u>
<u>L14</u>	protective garment	1290	<u>L14</u>
<u>L13</u>	link threads	79	<u>L13</u>
<u>L12</u>	link threads	79	<u>L12</u>
<u>L11</u>	thread link	89	<u>L11</u>
<u>L10</u>	l8 and l9	0	<u>L10</u>
<u>L9</u>	l1 and l3	74	<u>L9</u>
<u>L8</u>	l1 and l5 and l6	135	<u>L8</u>
<u>L7</u>	l3 and l5 and l6	0	<u>L7</u>
<u>L6</u>	hydrophobic same woven same layer	640	<u>L6</u>
<u>L5</u>	hydrophilic same woven same layer	619	<u>L5</u>
<u>L4</u>	l1 and l2 and l3	0	<u>L4</u>
<u>L3</u>	link same threads	3953	<u>L3</u>
<u>L2</u>	circulating same means	1051	<u>L2</u>
<u>L1</u>	garment or space suit	23611	<u>L1</u>

END OF SEARCH HISTORY

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side by side

Hit Count Set Name

result set

DB=DWPI; PLUR=YES; OP=ADJ

<u>L15</u>	l9 and l13	1	<u>L15</u>
<u>L14</u>	l10 and l11 and l13	4	<u>L14</u>
<u>L13</u>	garment	17419	<u>L13</u>
<u>L12</u>	l9 and l10 and l11	0	<u>L12</u>
<u>L11</u>	layer same woven same hydrophobic same (material or fabric or textile)	149	<u>L11</u>
<u>L10</u>	layer same hydrophilic same woven same (material or fabric or textile)	163	<u>L10</u>
<u>L9</u>	link threads	120	<u>L9</u>

DB=USPT,PGPB; PLUR=YES; OP=ADJ

<u>L8</u>	l1 and l4	1	<u>L8</u>
<u>L7</u>	l1 and l3	4	<u>L7</u>
<u>L6</u>	l1 and l2	7	<u>L6</u>
<u>L5</u>	l1 and l2 and l3 and l4	0	<u>L5</u>
<u>L4</u>	link threads	79	<u>L4</u>
<u>L3</u>	layer same hydrophilic same woven same (material or fabric or textile)	562	<u>L3</u>
<u>L2</u>	layer same woven same hydrophobic same (material or fabric or textile)	602	<u>L2</u>
<u>L1</u>	66/195	617	<u>L1</u>

END OF SEARCH HISTORY

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L14: Entry 1 of 4

File: DWPI

May 27, 1999

DERWENT-ACC-NO: 2000-326543

DERWENT-WEEK: 200028

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TITLE: Sewing article for discharge and localizing of individual's dermal respiration products and textile material for manufacture of such article

INVENTOR: KUCHKOVA, E I; MAKHANOVA, L V ; ZAIKINA, N B

PRIORITY-DATA: 1997RU-0122061 (December 26, 1997)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
RU 2130746 C1	May 27, 1999		000	A41D013/00

INT-CL (IPC): A41 D 13/00

ABSTRACTED-PUB-NO: RU 2130746C

BASIC-ABSTRACT:

NOVELTY - Sewing article formed as underwear or clothing worn next to individual's skin is manufactured from textile material composed of layers attached one to another by stitches. First fibrous layer adapted for contact with individual's skin is composed of hydrophobic filaments and second fibrous layer has hydrophilic filaments. Stitching threads form knitted weave. Sewing article and textile material used for manufacture of article may have face layer in the form of woven fabric or knitted fabric and additional hydrophobic filament layer positioned above layer having hydrophilic filaments. Material of such structure provides effective discharge and localization of dermal respiration products and prevents them from getting on garment.

USE - Textile industry.

ADVANTAGE - Improved quality of material, simplified structure and improved operational capabilities. 9 cl, 4 dwg



Generate Collection

L14: Entry 2 of 4

File: DWPI

May 19, 1993

DERWENT-ACC-NO: 1993-160955
DERWENT-WEEK: 199320
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TITLE: Multi layer moisture management fabric - has three layers of hydrophilic material, two thick layers and thin intermediate layer to remove moisture

INVENTOR: BRIER, D L; MORETZ, H L

PRIORITY-DATA: 1991US-0791066 (November 12, 1991), 1993US-0002650 (January 11, 1993), 1992US-0994114 (December 21, 1992)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 542491 A1	May 19, 1993	E	015	B32B005/26
CA 2081930 A	May 13, 1993		000	A61F013/46
US 5217782 A	June 8, 1993		012	B32B033/00
US 5306536 A	April 26, 1994		013	B32B033/00
US 5315717 A	May 31, 1994		014	A41B009/00

INT-CL (IPC): A41B 9/00; A61F 13/15; A61F 13/46; B32B 5/26; B32B 33/00; D06C 11/00

ABSTRACTED-PUB-NO: EP 542491A

BASIC-ABSTRACT:

The multi-layer fabric has a relatively thick inner layer (12,22) which is made of moisture permeable hydrophilic fabric and is positioned next to the skin. A second thick outer layer (14,24) is separated from the first by a thin intermediate hydrophilic fabric (13,23). This thin layer is formed from hydrophilic nylon fibre.

The first layer can be made from brushed polyester fibre while the second layer is a hydrophilic nylon fibre. This second layer may also be brushed.

ADVANTAGE - Removes moisture from contact with skin.

ABSTRACTED-PUB-NO:

US 5217782A EQUIVALENT-ABSTRACTS:

Multilayer moisture management fabric comprises a relatively thick knitted or woven inner moisture permeable hydrophobic fabric layer, e.g. of polyester opt. brushed fibre positioned for contact with the skin of a wearer, a first relatively thin knitted or woven intermediate hydrophilic fabric layer e.g. of hydrophilic nylon fibre and a second relatively thick knitted or woven outer hydrophilic moisture permeable fabric layer, e.g. of a brushed hydrophilic nylon fibre.

ADVANTAGE - The fabric is reusable, washable, capable of being formed into panels and is applicable to crotch area of garments for improved moisture control.

US 5306536A

The reusable, launderable, multi-layer moisture management fabric comprises a relatively thick knitted or woven inner moisture permeable hydrophobic fabric layer for being positioned next to the skin of the wearer of the garment. It has a first, relatively thin knitted or woven intermediate hydrophilic fabric layer positioned

adjacent the hydrophobic fabric layer on the side of it away from the skin of the wearer, and a second, relatively thick knitted or woven outer hydrophilic moisture permeable fabric layer.

This second layer is positioned adjacent the first hydrophilic fabric layer on the opposite side of it from the hydrophobic fabric layer.

USE - For being incorporated into reusable launderable garments, esp. in undergarments for controlling leakage and spotting caused by minor to moderate urinary incontinence and in colostomy patients.

US 5315717A

The multi-layer moisture management fabric includes a relatively thick inner moisture permeable hydrophobic fabric layer positioned next to the skin of the wearer of the garment. A first, relatively thin intermediate hydrophilic fabric layer is positioned adjacent the hydrophobic fabric layer on the side away from the skin of the wearer.

A second, relatively thick outer hydrophilic fabric layer is positioned adjacent the first hydrophilic fabric layer on the opposite side from the hydrophobic fabric layer.

USE - For being placed in garments.

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L14: Entry 3 of 4

File: DWPI

Jul 16, 1991

DERWENT-ACC-NO: 1991-230154

DERWENT-WEEK: 199131

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TITLE: Water-impermeable, moisture vapour-permeable coated polyolefin sheet - comprises microporous ultrahigh mol. wt. polyolefin sheet contg. siliceous filler, coated with hydrophobic moisture vapour-permeable polymer

INVENTOR: LEATHERMAN, D D; RECHLICZ, T

PRIORITY-DATA: 1990US-0473769 (January 31, 1990)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 5032450 A	July 16, 1991		000	
TW 197456 A	January 1, 1993		000	C08J007/04
WO 9111486 A	August 8, 1991		000	

INT-CL (IPC): B32B 3/00; B32B 27/14; C08J 7/04; C08J 9/36; C09D 183/04

ABSTRACTED-PUB-NO: US 5032450A

BASIC-ABSTRACT:

Coated articles impermeable to liq. water but permeable to moisture vapour comprise a sheet of microporous polymer material (I), joined to one side of which is a continuous moisture vapour-permeable coating of an elastomeric solid hydrophobic polymer (II). (I) comprises a matrix, of linear ultrahigh mol. wt. polyolefin (Ia), contg. regions of stretch-induced molecularly oriented (Ia) distributed throughout. Distributed throughout the matrix is a finely divided particulate water-insoluble filler.

A network of interconnecting pores, constituting more than 70 (pref. 80-95) vol% of (I), communicates throughout the matrix. (Ia) is selected from polyethylene and polypropylene, having intrinsic viscosity (IV) at least 18 and at least 6 dl/g respectively. The filler, at least 50 (pref. at least 65) wt% of which is siliceous, constitutes 50-90 wt% of (I).

USE/ADVANTAGE - The hydrophobic nature of (II) induces bead formation of liq. water on the surface. (I) becomes hydrophilic on washing and acts as a wicking agent to increase transfer of moisture to the surface. Opt. the coated material may be bonded on the uncoated side to a layer of porous material e.g. woven or knitted fabric, plastic film or foam, using a conventional fused hot melt adhesive or more pref. a thermosetting, moisture-cured polyurethane hot melt adhesive. The coated materials are esp. useful as free-hanging drop liners in garments, partic. those for outdoor or athletic use, or they may be stitch or spot-bonded to the fabric of the garment. Other uses include nappies, incontinence garments, sanitary towels, protective clothing, tents, sleeping-bags, etc..

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 3 of 3 returned.**☒ **1. Document ID: US 5651847 A**

L1: Entry 1 of 3

File: USPT

Jul 29, 1997

US-PAT-NO: 5651847

DOCUMENT-IDENTIFIER: US 5651847 A

TITLE: Double-face circular knit

DATE-ISSUED: July 29, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Loeffler; Alfons	Bobingen			DE

US-CL-CURRENT: 66/19; 29/91.1, 296/39.1, 428/219, 442/308, 442/318, 66/196

ABSTRACT:

There is described a double-face circular knit comprising two concentric lengths of knit web and an in-between spacer structure, wherein the spacer threads are optionally textured coarse-filament multifilament yarns, optionally in combination with monofilaments, the distance between the two lengths of knit web is from 0.3 to 8 mm, the stitch density corresponds to a machine gauge from E 16 to E 32, and the density of the spacer threads is between 150 and 250 threads per cm.sup.2. Preferably all the yarns of the double-face circular knit are made of the same polymer.

Also described are the production and use of this double-face circular knit.

18 Claims, 5 Drawing figures

Exemplary Claim Number: 1,10,13

Number of Drawing Sheets: 4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	CMC	Draw Desc	Image
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☒ **2. Document ID: US 5422153 A**

L1: Entry 2 of 3

File: USPT

Jun 6, 1995

US-PAT-NO: 5422153

DOCUMENT-IDENTIFIER: US 5422153 A

TITLE: Weft knitted composite fabric

DATE-ISSUED: June 6, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Miyamoto; Eiji	Kanazawa			JP

US-CL-CURRENT: 428/95; 428/116, 428/85, 442/313, 66/194, 66/196, 66/198, 66/202

ABSTRACT:

A weft knitted composite fabric comprises a frontal layer of a weft knitted fabric, a rear layer of a weft knitted fabric and binding yarns. Said rear layer of the weft knitted fabric is bound with said frontal layer by weave of said binding yarns and arranged with a given distance separating the frontal layer and the rear layer. Said binding yarns are more stiff than knitting yarns of said frontal layer and said rear layer. Said binding yarns comprise S-twist yarns and Z-twist yarns alternately. Said frontal layer of a weft knitted fabric may include knitting yarns for pile so that a surface of said frontal layer is provided with a pile.

5 Claims, 4 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 3

Full	Title	Publication	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NOTE	Draw Desc	Image
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☒ 3. Document ID: US 5413837 A

L1: Entry 3 of 3

File: USPT

May 9, 1995

US-PAT-NO: 5413837

DOCUMENT-IDENTIFIER: US 5413837 A

TITLE: Three-dimensional knit fabric

DATE-ISSUED: May 9, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rock; Moshe	Andover	MA		
Lumb; Douglas	Methuen	MA		

US-CL-CURRENT: 428/192; 428/116, 428/118, 428/195, 428/309.9, 428/81, 442/242, 442/318

ABSTRACT:

A three-dimensional knit or woven fabric that is permeable to water vapor but impermeable to liquid water is provided. The fabric includes a first fabric layer, a second fabric layer and a yarn interconnecting the two layers. The two layers and the yarn are preferably made from a synthetic, such as a polyester or nylon. Both the first and second fabric layers have a barrier layer adhered to the outside surfaces thereof which is both impermeable to liquid water and permeable to water vapor. The fabric is imperviously sealed to prevent the infiltration of water.

20 Claims, 2 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 1

Full	Title	Citation	Print	Revised	Classification	Date	Reference	Sequences	Attachments
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View	Draw Desc	Image
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[Generate Collection](#)[Print](#)

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((5413837 OR 5422153 OR 5651847)[PN]).USPT.	3

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Apr 20, 1971

DOCUMENT-IDENTIFIER: US 3575776 A

DATE-ISSUED: April 20, 1971

US-CL-CURRENT: 428/12; 139/384R, 139/410, 428/101

Full	Title

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(3575776[PN]).USPT.	1

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WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 2 of 2 returned.**☒ **1. Document ID: US 5582893 A**

L7: Entry 1 of 2

File: USPT

Dec 10, 1996

US-PAT-NO: 5582893

DOCUMENT-IDENTIFIER: US 5582893 A

TITLE: Spacing fabric

DATE-ISSUED: December 10, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
B ottger; Wolfgang	95361 K odnitz			DE
H orsch; Friedrich	89081 Ulm			DE

US-CL-CURRENT: [428/86](#); [428/102](#); [428/120](#); [428/85](#); [428/902](#); [442/239](#)

ABSTRACT:

A spacing fabric (3), in particular velour fabric, which spacing fabric has a first and second layer (4, 5) and intermediate webs (7) connecting these layers (4, 5) and is made of a technical yarn like aramide fibre, carbon fibre, ceramic fibre, or, in particular, glass fibre, with a resetting force inherent to the intermediate webs (7) which tends to automatically keep the layers (4, 5) of the spacing fabric (3) apart, especially also after resinification. The invention proposes that, in order to control the spacing of the layers of the spacing fabric, the layers (4, 5) of the spacing fabric (3) be attached to one another so that they can be detached.

10 Claims, 7 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 3

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RMC	Draw Desc	Image
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☒ **2. Document ID: US 5480697 A**

L7: Entry 2 of 2

File: USPT

Jan 2, 1996

US-PAT-NO: 5480697

DOCUMENT-IDENTIFIER: US 5480697 A

TITLE: Structural part based on a sandwich fabric

DATE-ISSUED: January 2, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bottger; Wolfgang	Kodnitz			DE
Pensel; Werner	Kulmbach			DE

US-CL-CURRENT: [428/86](#); [139/386](#), [428/111](#), [428/112](#), [428/119](#), [428/120](#), [428/223](#), [428/34.7](#), [428/36.1](#), [428/96](#), [442/205](#)

ABSTRACT:

A structural part having as its basis a sandwich fabric, in particular a velour fabric, having at least a first layer (a) and a second layer (b) and intermediate links connecting said layers (a, b), in which connection the fabric consists of a technical yarn such as aramid fiber, carbon fiber, ceramic fiber or, in particular, glass fiber, is resinified and cured, and the intermediate links form rigid spacing elements for the first and second layers (a, b). In order to be able to produce, in particular, structural parts which have a strong curvature, at least one of the layers (a, b) be woven in an open weave, such as used also in multi-layer fabrics.

8 Claims, 6 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 5

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#)

[KWC](#) [Draw Desc](#) [Image](#)

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Term	Documents
(2 AND 6).USPT.	2
(L2 AND L6).USPT.	2

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Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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IMAC	Draw Desc	Image
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☒ 4. Document ID: US 6151928 A

L7: Entry 4 of 4

File: USPT

Nov 28, 2000

US-PAT-NO: 6151928

DOCUMENT-IDENTIFIER: US 6151928 A

TITLE: Textile fabric

DATE-ISSUED: November 28, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anyon; David S.	Hillsburgh, Ontario			CA
So; Kin	Guelph, Ontario			CA

US-CL-CURRENT: 66/196; 66/193, 66/195

ABSTRACT:

A knitted fabric comprises a layer of hydrophillic yarn on one face of the fabric, a layer of hydrophobic yarn on the opposite face of the fabric. A pillar stitched, low density layer of yarn extends between and joins the hydrophillic and hydrophobic yarn layers.

16 Claims, 6 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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IMAC	Draw Desc	Image
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Term	Documents
(1 AND 3).USPT,PGPB.	4
(L1 AND L3).USPT,PGPB.	4

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L7: Entry 1 of 4

File: USPT

Apr 16, 2002

US-PAT-NO: 6373034

DOCUMENT-IDENTIFIER: US 6373034 B1

TITLE: Electric heating/warming fabric articles

DATE-ISSUED: April 16, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rock; Moshe	Andover	MA		
Sharma; Vikram	Stoneham	MA		

US-CL-CURRENT: 219/545; 219/211, 219/212, 219/527, 219/529, 219/549

ABSTRACT:

A fabric article that generates heat upon application of electrical power is formed, for example, by joining stitch and loop yarns to form a fabric body, with the loop yarn overlaying the stitch yarn at a technical face and forming loops at a technical back of the fabric body. An electrical resistance heating element, e.g., in the form of a conductive yarn, is incorporated into the fabric body at symmetrical and/or asymmetrical spaced-apart intervals as the stitch yarn, the electrical resistance heating elements extending between opposite edge regions of the fabric and conductor elements, e.g. located along edge regions, connect the electrical resistance heating elements to a source of electrical power. The technical face and/or the technical back of the fabric body may have fleece formed by finishing in a manner to avoid damage to electrical conductance of the electrical resistance heating elements. Preferably, the conductive yarn has a core of insulating material, an electrical resistance-heating element about the core, and a sheath material surrounding the electrical resistance heating element and core.

8 Claims, 30 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 9

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	WAC	Print Desc	Image
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☒ **2. Document ID: US 6307189 B1**

L7: Entry 2 of 4

File: USPT

Oct 23, 2001

US-PAT-NO: 6307189

DOCUMENT-IDENTIFIER: US 6307189 B1

TITLE: Electric heating/warming fabric articles

DATE-ISSUED: October 23, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rock; Moshe	Andover	MA		
Sharma; Vikram	Stoneham	MA		

US-CL-CURRENT: 219/545; 219/211, 219/212, 219/529, 219/549

ABSTRACT:

A fabric article that generates heat upon application of electrical power is formed, for example, by knitting or weaving, to form a fabric prebody. An electrical resistance heating element in the form of a conductive yarn is incorporated into the fabric prebody, the electrical resistance heating elements extending between opposite edge regions of the fabric. Conductive elements are provided for connecting the electrical resistance heating elements to a source of electrical power.

13 Claims, 27 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 7

Full Title: Electric heating/warming fabric articles; Date: Reference: Sequence: Attachments:

Page: Drawing: Description: Image:

☒ 3. Document ID: US 6215111 B1

L7: Entry 3 of 4

File: USPT

Apr 10, 2001

US-PAT-NO: 6215111

DOCUMENT-IDENTIFIER: US 6215111 B1

TITLE: Electric heating/warming fabric articles

DATE-ISSUED: April 10, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rock; Moshe	Andover	MA		
Sharma; Vikram	Stoneham	MA		

US-CL-CURRENT: 219/545; 219/211, 219/212, 219/529, 219/549

ABSTRACT:

A fabric article that generates heat upon application of electrical power is formed, for example, by knitting or weaving, to form a fabric prebody. An electrical resistance heating element in the form of a conductive yarn is incorporated into the fabric prebody, the electrical resistance heating elements extending between opposite edge regions of the fabric. Conductive elements are provided for connecting the electrical resistance heating elements to a source of electrical power.

55 Claims, 27 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 7

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L16: Entry 1 of 2

File: USPT

Aug 14, 1973

US-PAT-NO: 3751727

DOCUMENT-IDENTIFIER: US 3751727 A

TITLE: SPACE SUIT

DATE-ISSUED: August 14, 1973

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Shepard; Leonard F.	Dover	DE		
Durney; George P.	Dover	DE		
Case; Melvin C.	Dover	DE		
Kenneway, III; A. J.	Dover	DE		
Wise; Robert C.	Dover	DE		
Rinehart; Dixie	Dover	DE		
Bessette; Ronald J.	Wyoming	DE		
Pulling; Richard C.	Dover	DE		

US-CL-CURRENT: 2/2.14; 2/81, 455/575, 600/20

ABSTRACT:

Disclosed is a pressure suit for high altitude flights and particularly space missions. The suit is designed for astronauts in the Apollo Space Program and may be worn both inside and outside a space vehicle, as well as on the lunar surface. It comprises an integrated assembly of inner comfort liner, intermediate pressure garment, and outer thermal protective garment with removable helmet and gloves. The pressure garment comprises an inner convoluted sealing bladder and outer fabric restraint to which are attached a plurality of cable restraint assemblies. It provides versatility in combination with improved sealing and increased mobility for internal pressures suitable for life support in the near vacuum of outer space.

11 Claims, 25 Drawing figures Number of Drawing Sheets: 10

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NMC	Draw Desc	Image
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☐ 2. Document ID: US 2657396 A

L16: Entry 2 of 2

File: USPT

Nov 3, 1953

US-PAT-NO: 2657396

DOCUMENT-IDENTIFIER: US 2657396 A

TITLE: TEXT NOT AVAILABLE

DATE-ISSUED: November 3, 1953

US-CL-CURRENT: 4/536; 165/46, D02/743

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	RMC	Front Desc	Image
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Term	Documents
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3751727S	0
"2657396"[USPT,PGPB]	1
2657396S	0
("3751727" OR "2657396")[PN].USPT,PGPB.	2
((3751727 OR 2657396)[PN]).USPT,PGPB.	2

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Search Results - Record(s) 1 through 1 of 1 returned.☒ **1. Document ID: US 5735145 A**

L19: Entry 1 of 1

File: USPT

Apr 7, 1998

US-PAT-NO: 5735145

DOCUMENT-IDENTIFIER: US 5735145 A

TITLE: Weft knit wicking fabric and method of making same

DATE-ISSUED: April 7, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Pernick; Bruce M.	Stamford	CT		

US-CL-CURRENT: 66/196; 604/378, 66/193, 66/195, 66/197, 66/202

ABSTRACT:

A multi-layer weft knit fabric for absorbing moisture and wicking it from a first fabric layer to a second layer is described, as well as a method for making the fabric. The multi-layer fabric includes a first hydrophobic layer and a second hydrophilic layer, with the layers being secured together by a series of courses forming spacer yarns which maintain the fabric layers in a spaced relationship relative to each other. The spacer yarns are adapted to wick moisture from the hydrophobic layer to the hydrophilic layer. The spacer yarns are preferably knit-in or laid-in to the respective knit fabric layers, and a plastic water-resistant layer can be secured proximate the hydrophilic fabric layer. A method of integrally knitting the multi-layer fabric on a circular knitting machine is also described.

31 Claims, 5 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 2

Full Title

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Term	Documents
(18 AND 3).USPT,PGPB.	1
(L3 AND L18).USPT,PGPB.	1

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